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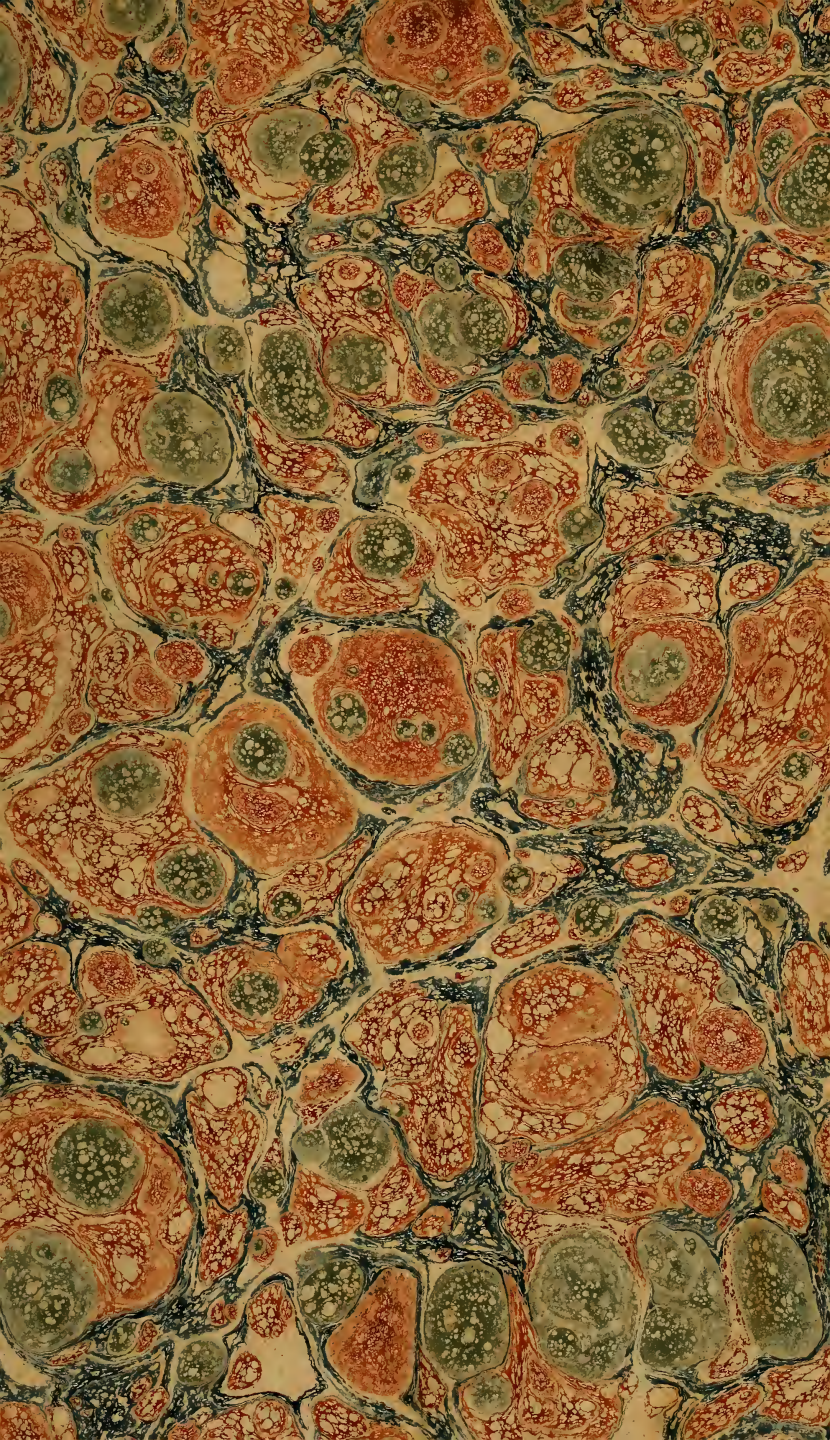

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REMARKS, &c.

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FARTHER

REMARKS

ON THE

USELESS STATE

OF THE

LOWER LIMBS,

IN CONSEQUENCE OF A

CURVATURE OF THE SPINE:

BEING

A SUPPLEMENT to a former TREATISE on that Subject.

By PERCIVALL POTT, F. R. S.
SURGEON to ST. BARTHOLOMEW'S HOSPITAL.

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FARTHER

REMARKS, &c.

IT is now near three years ſince I firſt troubled the public with my obſervations on the diſeaſe which makes the ſubject of the following tract.

The apology which I then made, for what I was perfectly aware might be thought a premature publication, was, that the diſtemper to which it related was ſuppoſed to be incapable of receiving any relief from art; and that they who were afflicted with it were therefore deſerted, and left to linger out a moſt miſerable exiſtence; but, that from the benefit which

I had ſeen to be derived from a particular, and at the ſame time a perfectly ſafe method of treating it, I thought that it demanded the immediate and ſerious regard of the profeſſion.

Previous to the publication, I had conſidered the diſeaſe with ſome attention, and had made ſome experiments on it, which, although not many, were ſufficient in number, and had been attended with ſuch a degree of ſucceſs as to ſatisfy me, that it was a ſubject in which mankind was much intereſted; but as I did not think that any one man's experience, be it what it might, was ſufficient to determine a matter of ſo much importance, I wiſhed that the faculty at large might be made acquainted with what I had ſeen and done, that they might be induced to make the ſame experiment, and thereby either contradict or confirm what I had ſaid; if the former ſhould be the reſult, my propoſition

ſition would ſoon meet with the neglect which it would deſerve; I could only conſole myſelf with the rectitude of my intention, and be ſorry for my miſtake: but if, on the contrary, the attempts of others ſhould prove as ſucceſsful as mine, it appeared to me, that the chirurgic art would make a great acquiſition, as it would be thereby furniſhed with the means of relieving one of the moſt diſtreſſing maladies to which human nature is liable; a malady which, when it befalls an adult, makes him compleatly miſerable, by depriving him of all power of being uſeful to himſelf or others; a malady which, when an infant becomes its victim, renders all the care and tears, all the tenderneſs and anxiety of the fondeſt parent abſolutely unavailing, and a malady for which it was ſuppoſed, there was no remedy.

Theſe were my reaſons for hazarding my opinion ſo haſtily: the importance of the ſubject, and the perfect ſafety of the experiment, were, as I thought, a ſufficient excuſe for ſo doing.

My wiſhes, and my expectations, have been moſt pleaſingly fulfilled. I have received ſuch manifold and repeated teſtimony of the ſucceſs of the propoſed method, from ſo large a number of the moſt eminent practitioners, not only in this town and kingdom, but in many other parts of Europe; that theſe, added to my own experience, have compleatly ſatisfied me, and enabled me to ſay, that in proper caſes, and under proper treatment, I have no doubt of its being univerſal.

In all the time which has paſſed ſince the firſt publication, I have ſought and embraced every opportunity of obtaining information, both from the living and from

from the dead; and I have requeſted and received the aſſiſtance of many friends, whoſe civilities, and whoſe information, I take this opportunity of acknowledging.

By theſe means I have been enabled to correct ſeveral errors, and to make ſome additional obſervations, which I hope may not only elucidate the original ſubject, but may ſerve other equally valuable purpoſes. Truths built on obſervation and experience, ſeldom ſtand ſingle; they generally lead to others, and become the means of more diffuſive knowledge.

THE

THE Diſeaſe, of which I am to ſpeak, is a diſeaſe of the Spine, producing an alteration in its natural figure, and not unfrequently attended with a partial, or a total loſs of the power of uſing, or even of moving, the lower limbs.

From this laſt circumſtance, (the loſs of the uſe the limbs) it has in general been called a Palſy, and treated as a paralytick affection; to which it is in almoſt every reſpect perfectly unlike.

The occaſion of the miſtake is palpable; the patient is deprived of the uſe of his legs, and has a deformed incurvation of the Spine; the incurvation is ſuppoſed to be cauſed by a diſlocation of the vertibræ; the diſplaced bones are thought to make an unnatural preſſure on the ſpinal marrow, and a preſſure on that being very likely to produce

produce a paralyſis of ſome kind, the loſs of the uſe of the legs is in this caſe determined to be ſuch: the truth is, that there is no diſlocation, no unnatural preſſure made on the ſpinal marrow, nor are the limbs by any means paralytick, as will appear to whoever will examine the two complaints with any degree of attention.

In the true paralyſis, from whatever cauſe, the muſcles of the affected limb are ſoft, flabby, unreſiſting, and incapable of being put into even a tonic ſtate; the limb itſelf may be placed in almoſt any poſition or poſture; if it be lifted up, and then let go, it falls down, and it is not in the power of the patient to prevent, or even to retard its fall: the joints are perfectly and eaſily moveable in any direction; if the affection be of the lower limbs, neither hips, knees, nor ancles, have any degree of rigidity or ſtiffneſs, but permit the limb to be turned or twiſted in almoſt any manner.

In

In the preſent caſe, the muſcles are indeed extenuated, and leſſened in ſize; but they are rigid, and always at leaſt in a tonic ſtate, by which the knees and ancles acquire a ſtiffneſs not very eaſy to overcome; by means of this ſtiffneſs, mixed with a kind of ſpaſm, the legs of the patient are either conſtantly kept ſtretched out ſtrait, in which caſe conſiderable force is required to bend the knees, or they are by the action of the ſtronger muſcles drawn acroſs each other, in ſuch manner as to require as much to ſeparate them: when the leg is in a ſtrait poſition, the extenſer muſcles act ſo powerfully as to require a conſiderable degree of force to bend the joints of the knees; and when they have been bent, the legs are immediately and ſtrongly drawn up, with the heels toward the buttocks: by the rigidity of the ancle joints, joined to the ſpaſmodic action of the gaſtrocnimii muſcles, the patient's toes are pointed downward in ſuch manner as to render

render it impoſſible for him to put his foot flat to the ground; which makes one of the deciſive characteriſtics of the diſtemper.

Theſe are ſtrong marks of the diſtinction which ought to be made between the two diſeaſes; and fully ſufficient to ſhew the impropriety of confounding them with each other.

The majority of thoſe who labour under this diſeaſe are infants or young children: Adults are by no means exempt from it, but I have never ſeen it at an age beyond forty.

When it attacks a child who is old enough to have walked properly, its aukward and imperfect manner of uſing its legs, is the circumſtance which firſt excites attention, and the incapacity of uſing them at all, which very ſoon follows, fixes that attention, and alarms the friends.

The account moſt frequently given is, that for ſome time previous to the incapacity, the child had been obſerved to be languid, liſtleſs, and very ſoon tired; that he was unwilling to move much, or briſkly; that he had been obſerved frequently to trip and ſtumble, although no impediment lay in his way; that when he moved haſtily or unguardedly, his legs would croſs each other involuntarily, by which he was often and ſuddenly thrown down; that if he endeavoured to ſtand ſtill, and upright, unſupported by another perſon, his knees would totter and bend under him; that he could not with any degree of preciſion or certainty, ſteadily direct either of his feet to any particular point, but that in attempting ſo to do, they would be ſuddenly, and involuntarily brought acroſs each other; that ſoon after this, he complained of frequent pains and twitchings in his thighs, particularly when

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in bed, and of an uneaſy ſenſation at the pit of his ſtomach; that when he ſat on a chair, or a ſtool, his legs were almoſt always found acroſs each other, and drawn up under the ſeat; and that in a little time after theſe particulars had been obſerved, he totally loſt the power of walking.

Theſe are the general circumſtances which are found, at leaſt in ſome degree, and that pretty uniformly in moſt infants and children, but there are others which are different in different ſubjects.

If the incurvation be of the neck, and to a conſiderable degree, by affecting ſeveral vertebræ, the child finds it inconvenient and painful to ſupport its own head, and is always deſirous of laying it on a table or pillow, or any thing to take off the weight. If the affection be of the dorſal vertebræ, the general marks of a diſtembered habit, ſuch as loſs of appetite, hard

dry cough, laborious reſpiration, quick pulſe, and diſpoſition to hectic, appear pretty early, and in ſuch a manner as to demand attention: and as in this ſtate of the caſe there is always, from the connection between the ribs ſternum and ſpine a great degree of crookedneſs of the trunk, theſe complaints are by every body ſet to the account of the deformity merely. In an adult, the attack and the progreſs of the diſeaſe are much the ſame, but there are ſome few circumſtances which may be learned from a patient of ſuch age, which either do not make an impreſſion on a child, or do not happen to it.

An adult, in a caſe where no violence hath been committed, or received, will tell you, that his firſt intimation was a ſenſe of weakneſs in his back bone, accompanied with what he will call a heavy dull kind of pain, attended with ſuch a laſſitude as rendered a ſmall degree of exer-

ciſe

ciſe fatiguing: that this was ſoon followed by an unuſual ſenſe of coldneſs in his thighs, not accountable for from the weather, and a palpable diminution of their ſenſibility. That in a little time more, his limbs were frequently convulſed by involuntary twitchings, particularly troubleſome in the night: that ſoon after this, he not only became incapable of walking, but that his power either of retaining or diſcharging his urine and fæces was conſiderably impaired, and his penis became incapable of erection.

The adult alſo finds all the offices of his digeſtive, and reſpiratory organs much affected, and complains conſtantly of pain and tightneſs at his ſtomach.

In infants, the curve is ſeldom noticed till it has got to ſuch ſize and ſtate, as to demand attention from the deformity: previous to this, all the marks of diſ-

temper

temper which appear in the child, paſs for the effects of general weakneſs, and are treated as ſuch; differently by different people, and under different circumſtances, but never with any permanent good effect; ſome of the adventitious ſymptoms if I may ſo call them, are, in ſome degree relieved, but the principal remain in full force, or what is much more frequent, go on increaſing.

In an adult it paſſes for rheumatiſm, or gravel, or a ſtrain, and the defect in the limbs is the firſt thing that occaſions an enquiry into the ſtate of the back bone.

When a curvature is perceived in an infant, it is always ſuppoſed to have received a hurt by a blow, or fall, and an adult has always recourſe to ſome exertion in pulling, drawing, lifting, or carrying, by which the ſpine is thought to have been deranged,

deranged, or injured; but which ſuppoſition is ſeldom, if ever true in either caſe.

The true cauſe of the diſeaſe, is a morbid ſtate of the ſpine, and of ſome of the parts connected with it; which diſtempered ſtate of parts will upon careful enquiry, be always found to have preceded the deformity ſome length of time; in infants this is the ſole cauſe, and external violence has nothing to do with it. In the adult, I will not aſſert that external miſchief is always and totally out of the queſtion, but I will venture to affirm what is equal, as far as regards the true nature of the caſe, which is, that although accident and violence may in ſome few inſtances be allowed to have contributed to its more immediate appearance, yet the part in which it ſhows itſelf, muſt have been previouſly in a morbid ſtate, and thereby prediſpoſed for the production of it. I do not by this mean to ſay that a violent exertion can not injure

injure the ſpine, nor produce a paralytick complaint, that would be to ſay more than I know; but I will venture to aſſert, that no degree of violence whatever is capable of producing ſuch an appearance as I am now ſpeaking of, unleſs the bodies of the vertebræ were by previous diſtemper diſpoſed to give way; and that no ſuppoſable diſlocation, cauſed by mere violence done to the bones of the back, which bones were before the receipt of the injury in a ſound ſtate, can poſſibly be attended with the peculiar ſymptoms of a curved ſpine. In which diſtinction, according to my judgment, conſiſts the very eſſence of the diſeaſe. Violence may eaſily be ſuppoſed to bring the two vertebræ nearer to each other than they ought to be, and by cruſhing an intermediate one to produce a curvature; but then the body of the vertebræ ſo cruſhed, muſt have been in a diſtempered ſtate previous to ſuch violence: great violence may alſo ſuddenly and immediately diſplace a perfectly

fectly found vertebræ from its proper and natural ſituation, with regard to thoſe annexed to it; but the neceſſary conſequences of theſe two kinds of injury muſt be ſo very different, that they never can be confounded together, or miſtaken for each other, even by the moſt inattentive obſerver.

The true curvature is invariably uniform in being from within outwards; but it varies in ſituation, in extent, and in degree; it affects the neck, the back, or the loins; it comprehends one vertebra only, or two, or more; and as few or more are affected, or, as theſe are more or leſs morbid, and conſequently give way more or leſs, the curve muſt be different; but whatever variety theſe circumſtances may admit, the lower limbs alone,* in general, feel the effect.

* Since I began to put theſe papers together, I have ſeen two caſes, in one of which the arms only were affected, in the other both legs and arms.

Mr.

effect. Some are very ſoon after the curvature, rendered totally and abſolutely incapable, not only of walking, but of uſing their legs in any manner; others can make ſhift to move about with the help of crutches, or by graſping their thighs juſt above the knees with both hands; ſome can ſit in an armed chair without much trouble or fatigue, others can not ſit up with any help; ſome retain ſuch a degree of power of uſing their legs, as to be able to ſhift their poſture when in bed; others have no ſuch power, and are obliged to be moved upon all occaſions.

Weak and delicate children are the moſt frequent ſubjects of this diſtemper; and when

Mr. E. Ford, of Golden Square, has favoured me with the examination and caſe of a lad, who loſt the uſe of both legs, and both arms, from a curvature which Mr. Ford cured by means of the cauſtics.—— Mr. Parke, of Liverpool, has alſo obliged me with an account of two perſons, both under his care, both with uſeleſs arms and legs, and both cured by the ſame means.

when in theſe, it ſeizes on the dorſal vertebræ, great deformity of the trunk both before, and behind, is the almoſt inevitable and neceſſary conſequence; this will be different in different perſons, but let the difference in this be what it may, it is an adjunct circumſtance, and upon due enquiry it will always be found that the curvature from within outward, preceded the other deformity, and was, at one time, the only one to be ſeen.

Before the alteration of figure in the back bone has been diſcovered, all the attention is paid to the limbs, in which the whole diſorder is ſuppoſed to reſide; and all the applications for relief are made to them: frictions, liniments, embrocations, bliſters, &c. to which is generally added cold-bathing and electricity; when the curvature has been noticed, recourſe is immediately had to back-boards, collars, ſteel boddice, ſwings, ſcrew-chairs, and

other pieces of machinery, but all to no purpoſe; the patient becomes daily more and more helpleſs and unhealthy, languiſhes for more or leſs time, and at laſt dies either in an emaciated ſtate from an hectic, or by a drain from an abſceſs formed within the body.

That this is the caſe frequent, and melancholy experience evinces, but why it is ſo, is perhaps not generally ſo well underſtood, or attended to as it ought to be.

The primary and ſole cauſe of all the miſchief, is a diſtempered ſtate of the parts compoſing or in immediate connection with the ſpine, tending to, and moſt frequently ending in a caries of the body, or bodies, of one or more of the vertebræ: from this proceed all the ills whether general, or local, apparent, or concealed; this cauſes the ill health of the patient, and, in time, the curvature. The helpleſs ſtate

of

of the limbs, is only one conſequence of ſeveral proceeding from the ſame cauſe; but though this effect is a very frequent one, and always affects the limbs in nearly the ſame manner; yet the diſeaſe not having its origin in them, no application made to them only can ever be of any poſſible uſe.

The ſame failure of ſucceſs attends the uſe of the different pieces of machinery, and for reaſons which are equally obvious.

They are all, from the moſt ſimple to the moſt complex, but particularly the ſwing and the ſcrew, calculated to obviate and remove what does not exiſt. They are founded upon the ſuppoſition of an actual *diſlocation* which never is the caſe, and therefore they always have been and ever muſt be unſucceſsful.

To underſtand this in the cleareſt and moſt convincing manner, we need only reflect on the nature of the diſeaſe, its ſeat, and the ſtate in which the parts concerned muſt neceſſarily be.

The bones are either already carious, or tending to become ſo; the parts connected with them are diſeaſed, and not infrequently ulcerated; there is no diſplacement of the vertebræ with regard to each other, and the ſpine bends forward only becauſe the rotten bone, or bones intervening between the ſound ones give way, being unable in ſuch ſtate to bear the weight of the parts above. The moſt ſuperficial reflection on this muſt point out to every one, why attempts of this kind can do no good, and a little more attention to the ſubject will ſhew why they may be productive of real, and great miſchief. The bones are ſuppoſed to be ſound, but diſplaced; theſe machines are

deſigned

deſigned to bring them back to their former ſituation, and thereby to reſtore to the ſpine its proper rectitude; if therefore they have any power, that power muſt be exerciſed on the parts in connection with the curve; which parts, when the diſeaſe is at all advanced, are incapable of bearing ſuch a degree of violence without being much hurt thereby: this, if it were merely theoretical, being a concluſion drawn from the obvious and demonſtrable ſtate of the diſtempered parts, could not be deemed unreaſonable; but, unfortunately for the afflicted, it is confirmed by practice. They who have had patience and fortitude to bear the uſe of them to ſuch a degree as to affect the parts concerned, have always found increaſe of pain and fever, and an exaſperation of all their bad ſymptoms, and I have known more than one inſtance in which the attempt has proved *fatal.*

The

The uſe of ſome or other of theſe pieces of machinery is ſo general, and the vulgar prejudice in their favour ſo great, that notwithſtanding I have been long convinced of their perfect inutility, yet if I had no other objection to them, I would not attempt to rob the afflicted of what they ſeem to derive ſuch comfortable expectation from; but as I am ſatisfied of their miſchievous effects, not only in the caſe of the preſent ſubject, but in many others; I can not help bearing my teſtimony againſt the indiſcriminate and very improper uſe which is daily made of them.

They are uſed with deſign to prevent growing children from becoming crooked or miſhapen, and this they are ſuppoſed to do by ſupporting the back-bone, and by forcing the ſhoulders unnaturally backward; the former they can not do, and in all caſes where the ſpine is weak, and thereby inclined to deviate from a right figure,

figure, the latter action of these instruments must contribute to rather than prevent such deviation; as will appear to whoever will with any attention examine the matter: if, instead of adding to the embarrassments of childrens dress by such iron restraints, parents would throw off all of every kind, and thereby give nature an opportunity of exerting her own powers; and if in all cases of manifest debility recourse was had to friction, bark, and cold bathing, with a due attention to air, diet, exercise, and rest, the children of the opulent would, perhaps, stand a chance of being as stout, as strait, and as well shapen as those of the laborious poor.

When a child appears to be what the common people call naturally weakly, whatever complaints it may have are supposed to be caused by its weak state, and it is generally believed that time and common care will remove them; but when a curvature has made its appearance, all these

marks of ill health, ſuch as laborious reſpiration, hard cough, quick pulſe, hectical heat and fluſhing, pain and tightneſs of the ſtomach, &c. are more attentively regarded, and ſet to the account of the deformity conſequent to the curve, more eſpecially if the curvature be of the dorſal vertebræ, in which caſe the deformity is always greateſt: but whoever will carefully attend to all the circumſtances of this diſorder, will be convinced, that moſt, if not all the complaints of children, labouring under this infirmity, precede the curvature, and that a morbid ſtate of the ſpine, and of the parts connected with it, is the original and primary cauſe of both. *

I have in the former edition informed the reader, that my particular attention to this diſeaſe

* "When I publiſhed the firſt edition of this tract, "I was not ſo aware of this truth, as a more enlarged "experience in, and a more careful attention to the "diſorder ſince has made me.

"I am very glad to embrace this opportunity of ac- "knowledging, and of correcting the miſtake, and the "more

diſeaſe was firſt excited by an inſtance of its being cured by a ſeemingly accidental abſceſs; that this firſt gave me reaſon to ſuſpect, that we had miſtaken an effect for a cauſe, and, that upon mature deliberation upon the matter, I was ſtill more inclined to think ſo for the following reaſons.

1. "That I did not remember ever to "have ſeen this uſeleſs ſtate of the limbs "from a mere malformation of the ſpine, "however crooked ſuch malformation "might have made it.

2. "That none of theſe deviations from "right ſhape, which growing girls are ſo "liable, to however great the deformity "might be, was ever attended with this "effect.

3. "That the kind of deformity, which "was attended with this affection of the

 "limbs,

"more ſo as I am convinced that an inference of the "greateſt importance may be drawn from it. I am "ſatisfied that this malady may, in many inſtances, "by early and proper attention, be prevented from pro-"ducing its otherwiſe inevitable conſequences, tempo-"rary lameneſs, and permanent deformity."

" limbs, although it was different as to its " degree, and its extent in different people, " yet it was uniform in one circumſtance, " which was, that the curvature always " was from within outwards.

4. " That ſince I had been particularly " attentive to the diſorder, I thought that I " had obſerved, that neither the extent, " nor degree of the curve, had in general " produced any material difference in the " ſymptoms, but that the ſmalleſt was, " when perfectly formed, attended with " the ſame conſequences as the largeſt."

5. That although it had ſometimes happened, that a blow, or a ſtrain, had preceded the appearance of the curve, yet it much more frequently happened, that no ſuch cauſe was aſſignable.

6. " That I had obſerved exactly the " ſame ſymptoms in infants, and in young " children, who had neither exerted themſelves, nor were ſuppoſed to have received " any

" any injury from others; and that the " caſe was ſtill the ſame in thoſe adults, " who had no ſuch cauſe to look to."

7. That although it might be expected, that a diſlocation of any of the vertebræ, would be attended with ſymptoms of the paralytic kind, yet they would be very unlike to thoſe which affected the limbs in the preſent caſe.

The ſuſpicions which theſe circumſtances had excited in my mind, were confirmed * by

* In the firſt edition I had deſcribed the bones on which the diſeaſe had ſeized, as being enlarged and ſpread; upon repeated inquiry and examination, I am convinced that they are not.

The bodies of the vertebræ concerned are often affected, while the ligaments bear but little mark of diſtemper; but whether the ligaments be affected, or not, the bodies of the vertebræ are always diſeaſed, which diſeaſe does not ſo properly *enlarge* as *erode:* the ſtate alſo of the intervertebral cartilages, I find to be ſubject to great variety, they being ſometimes totally deſtroyed, while the caries is ſmall in degree, ſometimes apparently but little injured, where the caries has done conſiderable miſchief, and ſometimes totally deſtroyed and annihilated.

by what I had a few opportunities of obſerving, in the dead bodies of ſome who had died afflicted with this diſorder, and altogether ſatisfied me, that there muſt be ſomething prediſpoſing in the parts concerned; and that when we attribute the uſeleſs ſtate of the limbs merely to the curvature, we miſtake, as I have juſt ſaid, an effect for a cauſe.

At the ſame time I gave an account of a converſation, which paſſed between me and the late Dr. Cameron, of Worceſter, who told me, that having remarked in Hippocrates, an account of a paralyſis of the lower limbs, cured by an abſceſs in the back he had in a caſe of uſeleſs limbs attended, with a curvature of the ſpine, endeavoured to imitate this act of nature by exciting a purulent diſcharge, and that it had proved very beneficial, which was confirmed to me by Mr. Jeffries, of Worceſter,

who

who had made the ſame experiment with the ſame ſucceſs. *

From the time of my receiving this firſt information to the preſent, I have ſought every opportunity of making the experiment; St. Bartholomew's Hoſpital has ſeldom been without caſes of this kind, and it is with infinite pleaſure and ſatisfaction, that I find myſelf enabled to ſay, that in all caſes where the complaint has been ſo circumſtanced as to admit of even probable expectation, the attempt has been ſucceſsful.

If the cure of this moſt dreadful diſtemper had depended upon an application to the conſtitution in general, it might have required a variety of medicines, the adminiſtration of which muſt have demanded judg-

* In this place of the firſt edition, I gave a ſhort account of the firſt two or three caſes which occurred to me; in this I omit them as needleſs.

The number of experiments which have been made by many of the moſt eminent practitioners, at home and abroad, have ſufficiently eſtabliſhed the fact, and render the relation of particular caſes unneceſſary.

judgment in adapting them to particular perſons and conſtitutions; and it muſt alſo, in the nature of things, have happened that many individuals could not have been benefited at all. But fortunately for the afflicted, the means of relief are ſimple, uniform, and ſafely applicable to every individual, under almoſt every poſſible circumſtance, not attended by the ſmalleſt degree of hazard, and capable of being executed by any body who has the leaſt portion of chirurgic knowledge: it conſiſts merely in procuring a large diſcharge of matter, from underneath the membrana adipoſa on each ſide of the diſtempered bones forming the curvature, and in maintaining ſuch diſcharge until the patient ſhall have recovered his health and limbs. They who are little converſant with matters of this ſort, will ſuppoſe the means very inadequate to the propoſed end; but they who have been experimentally acquainted with the very wonderful effects of purulent drains, made from the immediate neighbourhood of diſ-

eaſes,

eaſes, will not be ſo much ſurpriſed at this particular one; and will immediately ſee how ſuch kind of diſcharge, made, and continued from the diſtempered part, checks the further progreſs of the caries, give nature an opportunity of exerting her own powers, of throwing off the diſeaſed parts, and of producing by incarnation an union of the bones (now rendered ſound) and thereby eſtabliſhing a cure.

However, be all this as it may, the fact is undoubted, and the number of witneſſes, as well as patients producible in confirmation of it is ſo conſiderable, that it is needleſs to ſay any thing more on that head.

It is a matter of very little importance towards the cure, by what means the diſcharge be procured, provided it be large, that it come from a ſufficient depth, and,

that it be continued for a ſufficient length of time.*

I have tried the different means of ſetons, iſſues by inciſion, and iſſues by cauſtic, and have found the laſt in general preferable, being leaſt painful, moſt cleanly, moſt eaſily manageable, and capable of being longeſt continued.

The cauſtics ſhould be applied on each ſide of the curvature, in ſuch a manner as to leave the portion of ſkin covering the ſpinal proceſſes of the protruding bones, entire and unhurt, and ſo large, that the ſores upon the ſeparation of the eſchars, may eaſily hold each three or four peas in the caſe of the ſmalleſt curvature; but in large curves, a leaſt as many more.

Theſe iſſues ſhould not only be kept open, but the diſcharge from them ſhould be

* When I ſay this, I mean to ſignify that it is abſolutely without limitation, and muſt depend on their beneficial effect.

be maintained by means of orange peas, cantharides in fine powder, ærugo æris, or any ſuch application as may beſt ſerve the intended purpoſe, which ſhould be that of a large, and long continued drain.

Whatever length of time it may take to obtain a compleat cure, by reſtoring the health as well as the limbs, the iſſues muſt be continued at leaſt as long; and in my opinion, a conſiderable time longer, eſpecially in the perſons of infants and growing children; the neceſſity of which will appear more ſtrongly, when it ſhall be conſidered that infants and young children of ſtrumous habits, are the ſubjects who are moſt liable to this diſtemper, and that in all the time previous to menſtruation in one ſex, and puberty in the other, they are in general more ſerved by artificial drains than any other perſons whatever.

This, and this only, does or can alleviate the misery attending this distemper, and in proper time effect a cure.

By means of these discharges, the eroding caries is first checked, and then stopped; in consequence of which an incarnation takes place, and the cartilages between the bodies of the vertebræ having been previously destroyed, the bones become united with each other and form a kind of anchy losis.

The time necessary for the accomplishment of this, must, in the nature of things, be considerable in all cases, but very different according to different circumstances.

No degree of benefit or relief, nor any the smallest tendency towards a cure is to be expected, until the caries be stopped, and the rotten bones have begun to incarn; the larger the quantity of bones concerned,

concerned, and the greater degree of waſte and havock committed by the caries, the greater muſt be the length of time required for the correction of it, and for reſtoring to a ſound ſtate ſo large a quantity of diſtempered parts.——and vice verſa.*

In the progreſs toward a cure, the ſame gradation or ſucceſſion of circumſtances may be obſerved, as was found to attend the formation of the diſeaſe, with this difference, that they which attend the latter, are much more rapid than thoſe which accompany the former.

After the diſcharge has been made ſome time, very uncertain what the patient

* Nothing can be more uncertain than the time required for the cure of this diſtemper. I have ſeen it perfected in two or three months, and I have known it require two years; two thirds of which time paſſed before there was any viſible amendment.

tient is found to be better in all general reſpects, and if of age to diſtinguiſh, will acknowledge that he feels himſelf to be in better health; he begins to recover his appetite, gets refreſhing ſleep, and has a more quiet and leſs hectical kind of pulſe, but the relief which he feels above all others, is from having got rid of that diſtreſſing ſenſation of tightneſs about the ſtomach, in a little time more a degree of warmth, and a ſenſibility is felt in the thighs, which they had been ſtrangers to for ſome time, and generally much about the ſame time, the power of retaining and diſcharging the urine and fœces begins to be in ſome degree exerted.

The firſt return of the power of motion in the limbs is rather diſagreeable, the motions being involuntary and of the ſpaſmodic kind, principally in the night; and generally attended with a ſenſe of pain in all the muſcles concerned.

At

At this point of amendment, if it may be ſo called, it is no uncommon thing, eſpecially in bad caſes, for the patient to ſtand ſometime without making any farther progreſs; this in adults occaſions impatience, and in parents deſpair; but in the milder kind of caſe, the power of voluntary motion generally ſoon follows the involuntary.

The knees and ancles by degrees loſe their ſtiffneſs, and the relaxation of the latter enables the patient to ſet his feet flat upon the ground, the certain mark that the power of walking will ſoon follow; but thoſe joints having loſt their rigidity become exceedingly weak, and are not for ſome time capable of ſerving the purpoſe of progreſſion.

The firſt voluntary motions are weak, not conſtantly performable, nor even every day, and liable to great variation, from a number

number of accidental circumſtances, both external and internal.

The firſt attempts to walk are feeble, irregular, and unſteady, and bear every mark of nervous, and muſcular debility; the patient ſtands in need of much help, and his ſteps, with the beſt ſupport, will be, as I have juſt ſaid, irregular and unſteady; but when they have arrived at this, I have never ſeen an inſtance in which they did not ſoon attain the full power of walking.

When the patient can juſt walk, either with crutches, or between two ſupporters, he generally finds much trouble and inconvenience, in not being able to reſiſt, or to regulate, the more powerful action of the ſtronger muſcles of the thigh over the weaker, by which his legs are frequently brought involuntarily acroſs each other, and he is ſuddenly thrown down.

Adults

Adults find aſſiſtance in crutches, by laying hold of chairs, tables, &c. but the beſt and ſafeſt aſſiſtance for a child, is what is called a go-cart, of ſuch height as to reach under the arms, and ſo made as to encloſe the whole body: this takes all inconvenient weight off from the legs, and at the ſame time enables the child to move them as much as it may pleaſe.

Time and patience are very requiſite; but they do in this caſe, as in many others, accompliſh our wiſhes at laſt.

The deformity remaining after recovery is ſubject to great uncertainty, and conſiderable variety, as it depends on the degree of caries, and the number of bones affected: in general, it may be ſaid, that where one vertebræ only is affected, and the patient young, the curve will in length of time almoſt totally diſappear; but where two or three are affected, this cannot be ex-

 pected;

pected; the thing aimed at is the conſolidation and union of the bones, which had been carious, and are now become ſound: this is the *ſine quâ non* of the cure, and this muſt in ſuch caſes render the curvature, and conſequently the deformity, permanent: the iſſues will reſtore the uſe of the limbs, but not the loſt figure of the ſpine.

SINCE

SINCE this method of treating the diſtemper has been made known, the diſeaſe itſelf has been more adverted to, and applications for relief have been more frequent than they were while it was regarded as incurable. The number received into St. Bartholomew's Hoſpital, has been conſiderable, and, as it may be ſuppoſed, ſome in a ſtate to admit of cure, others not. While the thing was new, and before a number of cures ſufficient to eſtabliſh the fact had been wrought, it was doubted by moſt, and poſitively denied by ſome; but ſince a variety of ſucceſſes has put the matter beyond all doubt, with regard to the reſtoration of the uſe of the limbs, it has been ſaid, that as the diſeaſe is manifeſtly a diſeaſe of the bones, it is to be apprehended, that the expectation of relief may in ſome caſes fail, and that in others it may not prove permanent; that the ſame kind of conſtitution remaining, a return of

the malady may be feared; and, in ſhort, that a much greater degree of uncertainty may occur, than might be expected from the account which I have given.

To the firſt I anſwer, that in caſes where the caries is very extenſive, and the conſtitution has been thereby ſo injured as to produce a degree of miſchief tending to the deſtruction of the patient, no good is to be expected; the diſeaſe has been too long neglected, and is become thereby an overmatch for the remedy. But how does this differ from what may be ſaid, with the ſame truth, of every diſeaſe, and of every remedy. To the ſecond, third, and fourth remark, all I can ſay is, that in the ſpace of three years, during which I have had many opportunities of making the experiment, I have met with but one ſingle inſtance in which it has failed, where, from the ſtate of the diſeaſe, and of the patient, there was any reaſonable foundation

foundation for hopes; that all thoſe who have ſubmitted to keep the iſſues open long enough, have been ſo reſtored to health, and to the free uſe of their limbs, as to be perfectly capable, not only of exerciſe, but of hard labour, and that I have never yet, among thoſe ſo treated, met with one on whom the diſeaſe has returned.

On the other hand, the nature of the original diſtemper in the habit, its effects both local and general, the gradual, ſlow manner in which alone a cure is obtainable, and the particular circumſtance on which ſuch cure entirely depends, I mean the removal of the caries, and the union of the bones with each other, all very ſtrongly point out the propriety of continuing that diſcharge for a ſufficient length of time, from which, and from which only, ſuch benefit has been derived.

AT

AT the beginning of the preceding tract I have ſaid, that when I firſt began to conſider the diſtemper with that degree of attention which it ſeemed to deſerve, I was inclined to ſuſpect that we had hitherto regarded it too ſuperficially; that we had been ſatisfied with obſerving its external appearance merely, without enquiring into its real nature; that we had thereby been led to miſtake an effect for a cauſe, and that there muſt certainly be either in the conſtitution of the patient, or in the ſtate of the parts concerned, ſomething which tended to produce this very dreadful malady.

I am ſatisfied I was right in my conjecture, and am convinced, from every circumſtance, general and particular, in the living, and from every appearance in the dead, that the complaint ariſes from what

is

is commonly called a ſtrumous, or ſcrophulous indiſpoſition, affecting the parts compoſing the ſpine, or thoſe in its immediate vicinity.

This morbid affection ſhews itſelf in a variety of forms, but, although its appearances be various, yet they are always ſuch as determine the true nature of the diſtemper.

Sometimes it appears in a thickened ſtate of the ligaments, connecting the vertebræ together, without any apparent affection of the bones.

Sometimes in the form of a diſtempered ſtate of the intervertebral ſubſtances, called cartilages.

Sometimes in that of diſeaſed glands, either in a merely indurated and enlarged ſtate, or what is more frequent, in that of a partial ſuppuration.

Some-

Sometimes it is found in the form of bags or cyſts, containing a quantity of ſtuff of a very unequal conſiſtence, partly purulent, partly ſanious, and partly a curd-like kind of ſubſtance; and not unfrequently entirely of the laſt.

Sometimes under theſe bags, or cyſts, even while they remain whole, the ſubjacent bones are found to be diſtempered, that is, deprived of perioſtium, and tending to become carious.

Sometimes theſe collections erode the containing membranes, and make their way downward by the ſide of the pſoas muſcle, toward the groin, or by the ſide of the pelvis behind the great trochanter, or in ſome caſes to the outſide of the upper part of the thigh.

Sometimes each of the diſtempered ſtates of theſe parts is accompanied by a greater or leſs degree of deformity, and crookedneſs of

of the ſpine without any apparent diſeaſe of the bones compoſing it: ſometimes the deformity is attended with an eroſion, or caries of the body or bodies of ſome of the vertebræ; and ſometimes the ſame bones are found to be carious, without any crookedneſs or alteration of figure.

Theſe different affections of the ſpine, and of the parts in its immediate neighbourhood, are productive of many diſorders, general and local, affecting the whole frame and habit of the patient, as well as particular parts; and, among the reſt, of that curvature which is the ſubject of this enquiry; and it may not be amiſs to remark, that ſtrumous tubercles in the lungs, and a diſtempered ſtate of ſome of the abdominal viſcera, often make a part of them.

From an attentive examination of theſe morbid appearances, and of their effects in different ſubjects, and under different

circumſtances, the following obſervations, tending not only to illuſtrate and explane the true nature of the diſeaſe in queſtion, but alſo to throw light on others of equal importance, may I think be made.

1. That the diſeaſe which produces theſe effects on the ſpine, and the parts in its vicinity, is what is in general called the ſcrophula; that is, that ſame kind of indiſpoſition as occaſions the thick upper lip, the tedious obſtinate ophthalmy, the indurated glands under the chin, and in the neck, the obſtructed meſentary, the hard dry cough, the glairy ſwellings of the wriſt and ancles, the thickened ligaments of the joints, the enlargement, and caries of the bones, &c. &c. &c.

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2. That this diſeaſe, by falling on the ſpine, and the parts connected with it, is the cauſe of a great variety of complaints, both general and local.

3. That

3. That when theſe complaints are not attended with an alteration of the figure of the back bone, neither the real ſeat, nor true nature of ſuch diſtemper are pointed out by the general ſymptoms, and conſequently, that they frequently are unknown, at leaſt while the patient lives.

4. That when by means of this diſtemper an alteration is produced in the figure of the back bone, that alteration is different in different ſubjects, and according to different circumſtances.

5. That when the ligaments and cartilages of the ſpine become the ſeat of the diſorder, without any affection of the vertebræ, it ſometimes happens that the whole ſpine, from the loweſt vertebra of the neck downwards, gives way laterally, forming ſometimes one great curve to one ſide, and ſometimes a more irregular figure, producing general crookedneſs and deformity

mity of the whole trunk of the body, attended with many marks of ill health.

6. That theſe complaints, which are by almoſt every body ſuppoſed to be the effect of the deformity merely, are really occaſioned by that diſtempered ſtate of the parts within the thorax, which is at the ſame time the cauſe both of the deformity and of the want of health.

7. That the attack is ſometimes on the bodies of ſome of the vertebræ; and that when this is the caſe, ulceration or eroſion of the bone, is the conſequence, and not enlargement.

8. That when this eroſion or caries ſeizes the body or bodies of one or more of the vertebræ, it ſometimes happens that the particular kind of curvature which makes the ſubject of theſe ſheets is the conſequence.

9. That

9. That this curvature, which is always from within outward, is cauſed by the eroſion or deſtruction of part of the body or bodies of one or more of the vertebræ; by which means that immediately above the diſtemper, and that immediately below it, are brought nearer to each other than they ſhould be, the body of the patient bends forward, the ſpine is curved from within outward, and the tuberoſity appears behind, occaſioned by the protruſion of the ſpinal proceſſes of the diſtempered vertebræ. See plate 1, 2, and 3.

10. That according to the degree of carious eroſion, and according to the number of vertebræ affected, the curve muſt be leſs or greater.

11. That when the attack is made upon the dorſal vertebræ, the ſternum and ribs, for want of proper ſupport, neceſſarily give way,

way, and other deformity, additional to the curve is thereby produced.

12. That this kind of caries is always confined to the bodies of the vertebræ, ſeldom or never affecting the articular proceſſes. *

13. That without this eroſive deſtruction of the bodies of the vertebræ, there can be no curvature of the kind which I am ſpeaking of; or, in other words, that eroſion is the *ſine quâ non* of this diſeaſe; that although there can be no true curve without caries, yet there is, and that not infrequently, caries without curve. See plate 5.

14. That the caries with curvature and uſeleſs limbs, is moſt frequently of the cervical

* I have ſeen two caſes in which the bodies of the vertebræ were totally ſeparated from all connection with the other parts, leaving the membrane, which included the ſpinal marrow, perfectly bare. See plate 4.

cervical or dorſal vertebræ; the caries without curve, of the lumbal, though this is by no means conſtant or neceſſary.

15. That in the caſe of carious ſpine, without curvature, it moſt frequently happens, that internal abſceſſes, and collections of matter are formed, which matter makes its way outward, and appears in the hip, groin, or thigh; or, being detained within the body, deſtroys the patient: the real and immediate cauſe of whoſe death is ſeldom known, or even rightly gueſſed at, unleſs the dead body be examined.

16. That what are commonly called lumbal and pſoas abſceſſes, are not infrequently produced in this manner, and therefore when we uſe theſe terms, we ſhould be underſtood to mean only a deſcription of the courſe which ſuch matter has perſued in its way outward, or the place where it makes its appearance externally,

nally, the terms really meaning nothing more, nor conveying any preciſe idea of the nature, ſeat, or origin of a diſtemper ſubject to great variety, and from which variety its very different ſymptoms and events, in different ſubjects, can alone be accounted for.

17. That contrary to the general opinion, a caries of the ſpine is more frequently a cauſe than an effect of theſe abſceſſes.

18. That the true curvature of the ſpine, from within outward, of which the paralytic, or uſeleſs ſtate of the lower limbs, is a too frequent conſequence, is itſelf but *one* effect of a diſtempered ſpine; ſuch caſe being always attended with a number of complaints which ariſe from the ſame cauſe: the generally received opinion, therefore, that all the attending ſymptoms are derived from the curvature, conſidered abſtractedly, is by no means founded in truth,

truth, and may be productive of very erroneous conduct.

19. That in the case of true curvature, attended with useless limbs, there never is a *dislocation*, properly to be so called; but that the alteration in the figure of the back bone, is caused solely by the erosion and destruction of a part of one or more of the corpora vertebrarum; and, that as there can be no true curvature without caries, it must be demonstrably clear, that there must have been a distempered state of parts previous to such erosion; from all which it follows, that this distemper, call it by what name you please, ought to be regarded as the original cause of the whole, that is, of the caries, of the curvature, and all the attendant mischiefs, be they what they may, general or particular: a consideration, as it appears to me, of infinite importance to all such infants and young children, as shew either from their general complaints,

or from their ſhape, a tendency to this kind of evil; and whoſe parents and friends generally content themſelves with a ſwing, or piece of iron machinery, and look no farther.

20. That whoever will conſider the real ſtate of the parts when a caries has taken place, and the parts ſurrounding it are in a ſtate of ulceration, muſt ſee why none of the attempts, by means of ſwings, ſcrews, &c. can poſſibly do any good, but, on the contrary, if they act ſo as to produce any effect at all, it muſt be a bad one.

21. That the diſcharge, by means of the iſſues, produces in due time (more or leſs under different circumſtances) a ceſſation of the eroſion of the bones; that this is followed by an incarnation, by means of which the bodies of the vertebræ which had been the ſeat of the diſeaſe, coaleſce, and unite with each other, forming a kind of anchyloſis.

22. That

22. That the different degrees and extent of the caries, in different ſubjects, muſt render all attempts to cure uncertain, both as to the time required, and as to the ultimate event: the leaſt and ſmalleſt degree will (every thing elſe being equal) be ſooneſt relieved and cured; the larger and more extenſive will require more time, and where the rottenneſs is to a great degree, and all the ſurrounding parts in a ſtate of diſtempered ulceration, it muſt foil all attempts, and deſtroy the patient.

23. That when two or more vertebræ are affected, forming a large curve, however perfect the ſucceſs may be with regard to the reſtoration of health and limbs, yet the curvature will and muſt remain, in conſequence of the union of the bones with each other.

24. That the uſeleſs ſtate of the limbs is by no means a conſequence of the altered figure of the ſpine, or of the diſpoſition of

the bones with regard to each other, but merely of the caries: of this truth there needs no other proof, than what may be drawn from the cure of a large and extenſive curvature, in which three or more vertebræ were concerned: in this the deformity always remains unaltered and unalterable, notwithſtanding the patient recovers both health and limbs.

Upon the whole, after due conſideration of what has been ſaid concerning the nature of the complaint, its producing cauſe, and the method by which it is capable of being cured, I would aſk, whether the diſeaſed ſtate of the ſpine, and of the parts connected with it, (which, if not prevented, muſt produce ſome of its very dreadful effects,) may not, by a timely uſe of proper means, be prevented?

A morbid ſtate of parts previous to deformity, caries, or curve, muſt be allowed: every complaint of the living, and every appearance

appearance in the dead, prove it beyond contradiction or doubt. All the general complaints of perſons afflicted with this diſorder will always, upon careful enquiry, be found to have preceded any degree of deformity, to have encreaſed as the curve became apparent, and to have decreaſed as the means uſed for relief took place: the pain and tightneſs about the ſtomach, the indigeſtion, the want of appetite, the diſturbed ſleep, &c. &c. gradually diſappear, and the marks of returning health become obſervable before the limbs recover the ſmalleſt degree of their power of moving.

On the other hand, it is as true, that when from extent, or degree, or inveteracy of the caries, the iſſues are found to be unequal to the wiſhed-for effect, the general complaints receive no amendment, but encreaſe until the patient ſinks under them.

If all this be true, which that it is, the manifold and repeated experience of many, as well as myſelf, can amply teſtify; and if it be found that the iſſues are capable of affecting a perfect curve, even after a caries has taken place, and that to a conſiderable degree, which is alſo true to demonſtration, is it not reaſonable to conclude, that the ſame means made uſe of in due time might prove preventive.

If this was a matter of mere ſpeculation, or opinion, I would be very cautious how I ſpake on the ſubject; but it is really a matter of experiment; and as far as I have had it in my power to put it to that teſt, it has ſucceeded, by the reſtoration of loſt health, and the prevention of a deformity which was advancing rapidly.

It may, perhaps, be ſaid, that if no ſuch means had been uſed, the ſame ſpace of time might have produced the ſame effect: to this

this it is impoſſible to make an anſwer: I ſhall, therefore, content myſelf with having given my opinion, with the circumſtances and reaſons on which it is founded.

I ſhould be ſorry to be miſunderſtood on this point, or to have it thought that I meant to ſay, that every weak or ricketty child was neceſſarily liable to a curved ſpine; or that iſſues were to be deemed an infallible remedy for the ills ariſing from a ſtrumous habit: far be it from me to ſay either: what I would wiſh to be underſtood to mean is, that ſuch kind of habit appears to me to be moſt apt to produce ſome of the miſchiefs mentioned in this tract: that as a purulent diſcharge, derived from the neighbourhood of the ſpine, is found, from repeated experience, to be a ſucceſsful remedy, even after the diſeaſe is confirmed by a caries, it ſeems to me to bid fairer than any thing elſe, if uſed in time to become a preventive; and, that as ſome other kinds

of

of deformity are found to follow attacks of the ſame kind of conſtitutional diſorder ſeizing on theſe parts, and which, though not cauſing preciſely the ſame effect, are nevertheleſs attended with the ſame general ſymptoms; I cannot help thinking, that it may be well worth while to try whether benefit be not obtainable by the ſame means, in the one caſe as in the other; and if the old maxim, "*anceps remedium quam* "*nullum*" be admiſſible, ſurely an experiment, which is in its nature perfectly incapable of harm, is worth making.

THE END.

Plate 2

R. Laurie, fecit

R. Laurie fecit

R. Laurie fecit.

R. Laurie, fecit

A View of some of the Vertebræ in a case of Curved Spine which had been Cured by the Caustic, & which were taken from the body of the Patient who died of another distemper at some distance of Time after. In this may be seen the State of the Vertebræ which had been Crushed, and of the Consequent Anchylosis or Union.

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R. Laurie, fecit.

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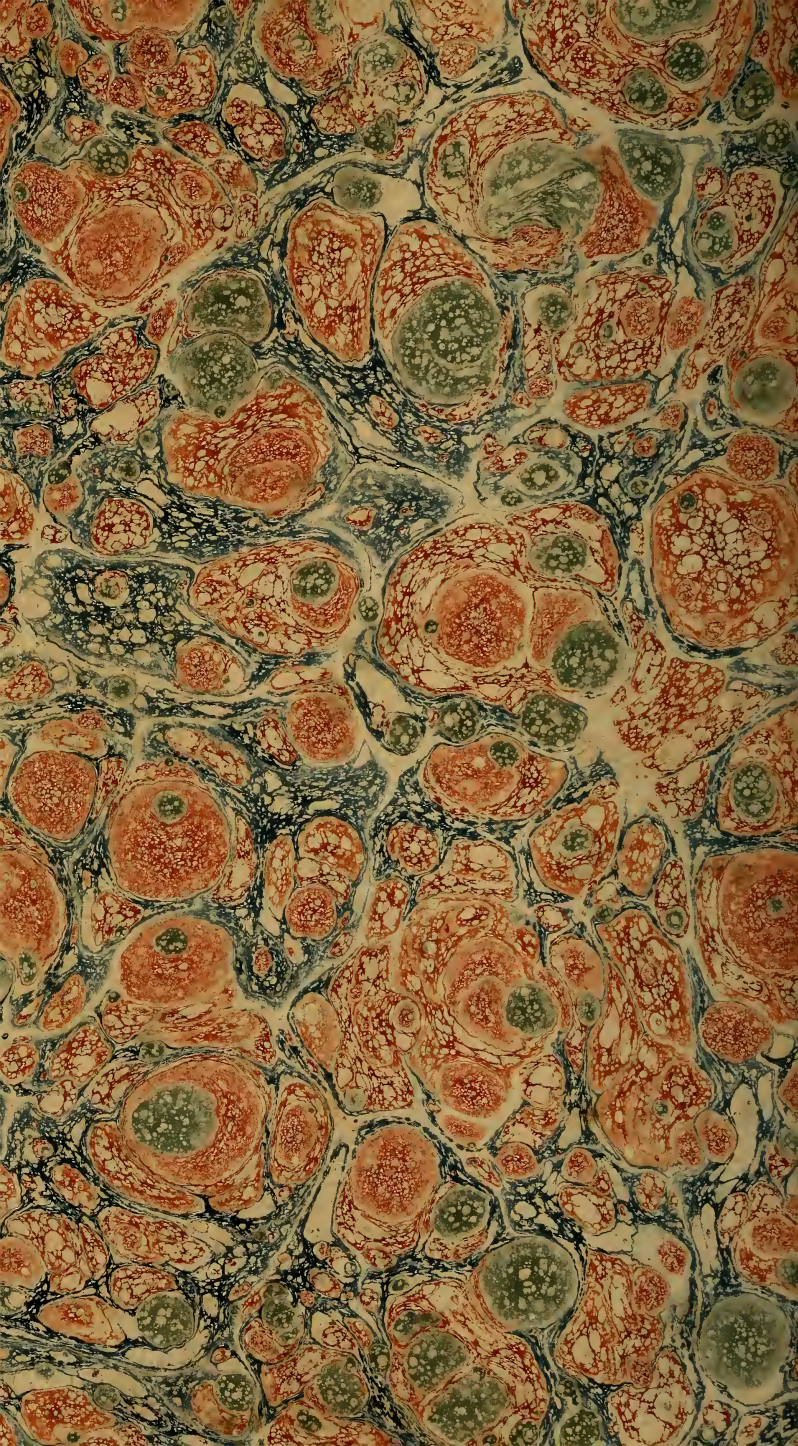
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